

Notice of Allowability

Application No.

10/799,021

Examiner

Rodney Amadiz

Applicant(s)

PARK ET AL.

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed September 17, 2007.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☒ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 9/17/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 11/20/07
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 17, 2007 has been entered.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeffrey Hopkins on November 20, 2007.

The application has been amended as follows:

As to **Claim 4**, please amend as follows:

—The apparatus of claim 1, wherein the signal controller comprises:
a data comparator for comparing the present image data with the previous image data for each pixel and for generating the first comparison signal for each pixel row, the first comparison signal having pulses generated when the present image data differs from

the previous image data or when the difference between the present image data and the previous image data is larger than a predetermined value;

a first counter for counting the number of the pulses contained in each of the first comparison signals and for generating the second comparison signal for each frame, the second comparison signal having pulses generated when the number of the counted pulses in the respective first comparison signals is larger than a first predetermined number;

a second counter for counting the number of the pulses contained in each of the second comparison signals and generating the third comparison signal for the filtering period, the third comparison signal having pulses generated when the number of the counted pulses in the respective second comparison signals is larger than a second predetermined number; and

a frame state detector for determining that the image types during the interval period following the filtering period are motion images if the respective number of the pulses contained in the third comparison signals for the interval period is more than a the third predetermined number and, that if not, the image data for the filtering period are still images, and for outputting the image type selection signal having the first state or the second state based on the determination.—

As to Claim 13, please amend as follows:

—A method for driving a liquid crystal display including a plurality of pixels arranged in a matrix, the method comprising:

reading out image data of a previous frame and of a present frame;

comparing the image data of the previous frame with the image data of the present frame for every pixel;

generating a first comparison signal for each pixel row, the first comparison signal including pulses generated when the image data of the previous frame differs from the image data of the present frame or the difference between the image data of the previous frame and the image data of the present frame is larger than a predetermined value;

counting the number of the pulses included in each of the first comparison signals;

generating a second comparison signal for each frame, the second comparison signal including pulses generated when the number of the counted pulses in the respective first comparison signals is larger than ~~the a~~ a first predetermined number;

counting the number of the pulses included in each of the second comparison signals;

generating a third comparison signal for each of first periods, the third comparison signal including pulses generated when the number of the counted pulses in the respective second comparison signals is larger than a second predetermined number;

determining that image data for respective second periods following the first periods represent motion image when the respective number of the pulses included in the third comparison signals is larger than a third ~~determined~~ predetermined number, determining as still image if not; and

suspending predetermined control operation if the image data represent still image.—

Allowable Subject Matter

3. Claims 1-35 are allowed.
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mattison et al.

U.S. Patent 6,366,317

5. The following is an examiner's statement of reasons for allowance: As to Claim 1, the above cited references, as well as those used in the prior rejection of the Office Action mailed July, 17, 2007, have failed to teach the following:

"An apparatus for driving a liquid crystal display including...a signal controller supplying the image data for the data driver, determining image types of images represented by the image data in two adjacent frames during an interval period based on the difference in the image data between two adjacent frames during a filtering period, and suspending image data modification during a predetermined period if the image types of

images during the interval period are determined to be still images, the signal controller comparing a present image data with a previous image data for each pixel and generates a first comparison signal for each pixel row, the signal controller counting the number of the pulses contained in each of the first comparison signals and generates a second comparison signal for each frame, the signal controller counting the number of the pulses contained in each of the second comparison signals and generates a third comparison signal for the filtering period, the signal controller determining that the image types during the interval period following the filtering period are motion images if the respective number of the pulses contained in the third comparison signals for the interval period is more than a third predetermined number and, that if not, the image data for the filtering period are still images, and the signal controller outputting an image type selection signal having a first state or a second state based on the determination.”

As to **Claim 13**, please note the reasons for allowance stated in the Final Office Action mailed July 17, 2007.

As to **Claim 20**, the above cited references, as well as those used in the prior rejection of the Office Action mailed July, 17, 2007, have failed to teach the following: “An apparatus for driving a liquid crystal display including... a signal controller adapted to supply the image data for the data driver, wherein the signal controller compares present image data with previous image data for each pixel and generates a first signal for each pixel row, wherein the signal controller counts the number of pulses in each of the first signals and generates a second signal for each frame, wherein the signal controller counts the number of pulses in each of the second signals and generates a

third signal, wherein the signal controller determines whether the image types are motion images if the number of the pulses in the third signals is more than a third predetermined number and, if not, the image types are still images, and wherein the signal controller outputs an image type selection signal having a first state or a second state based on the determination."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Amadiz whose telephone number is (571) 272-7762. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

R.A.

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11/20/07
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SUPERVISORY PATENT EXAMINER

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